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## (12) United States Patent

### Gerber et al.

### (54) SYSTEMS AND METHODS FOR MULTIPLE ANALYTE ANALYSIS

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See application file for complete search history.

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# References Cited U.S. PATENT DOCUMENTS

4,397,956 A 8/1983 Maggio 5,071,769 A 12/1991 Kundu et al.

(Continued)

### FOREIGN PATENT DOCUMENTS

EP 279069 7/1994 EP 1023455 5/2007

(Continued)

## OTHER PUBLICATIONS

FreeStyle User Manual (Mar. 2011 Revision).\*

(Continued)

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### (57) ABSTRACT

Systems and methods for multiple analyte analysis are provided. In one embodiment, a method includes determining concentrations of first and second analytes in a sample. The first and second analytes may be, for example, glucose and hydroxybutyrate. In this form, an indication related to the measured concentration of hydroxybutyrate is provided in response to determining that the concentration of hydroxybutyrate is above a predetermined value. In a further aspect of this form, a quantitative indication representative of the measured glucose concentration is automatically provided regardless of the value of the measured glucose concentration. In another embodiment, a system includes a meter configured to interact with a test element to assess first and second analytes in a sample. Further embodiments, forms, objects, features, advantages, aspects, and benefits shall become apparent from the description and drawings.

### 10 Claims, 12 Drawing Sheets

